

# **KLEIN BROADCAST ENGINEERING**

*dedicated to improving the science and technology of radio & television communications*

INTRODUCTION and ENGINEERING STATEMENT cont'd page three:

DEAS COMMUNICATIONS, INC.  
HEALDSBURG , CALIFORNIA

This FCC Form 301 Application for FM Broadcast Station Construction Permit has been prepared in accordance with Section 73 of the Rules and Regulations of the Federal Communications Commission as amended to date. Therefore, the applicant, Deas Communications, Inc., requests the Commission consider and GRANT this application for FM Broadcast Station Construction Permit, for the facilities requested herein.

Respectfully submitted,

A handwritten signature in black ink, appearing to be 'E. Klein', with a long horizontal line extending to the right.

Elliott Kurt Klein,  
Consulting Broadcast Engineer

4 February 1991

**Section V-B - FM BROADCAST ENGINEERING DATA**

**FOR COMMISSION USE ONLY**

File No. \_\_\_\_\_

ASB Referral Date \_\_\_\_\_

Referred by \_\_\_\_\_

Name of Applicant

DEAS COMMUNICATIONS, INC.

Call letters (if issued)

(NEW - FM)

Is this application being filed in response to a window? ☒ Yes ☐ No

If Yes, specify closing date: FEBRUARY 10, 1991

Purpose of Application: (check appropriate boxes)

☒ Construct a new (main) facility

☐ Construct a new auxiliary facility

☐ Modify existing construction permit for main facility

☐ Modify existing construction permit for auxiliary facility

☐ Modify licensed main facility

☐ Modify licensed auxiliary facility

If purpose is to modify, indicate below the nature of change(s) and specify the file number(s) of the authorizations affected.

☐ Antenna supporting-structure height

☐ Effective radiated power

☐ Antenna height above average terrain

☐ Frequency

☐ Antenna location

☐ Class

☐ Main Studio location

☐ Other (Summarize briefly)

File Number(s) \_\_\_\_\_

**1. Allocation:**

Channel No.	Principal community to be served:		
	City	County	State
240	HEALDSBURG	SONOMA	CA

Class (check only one box below)

☒ A ☐ B1 ☐ B ☐ C3

☐ C2 ☐ C1 ☐ C

**2. Exact location of antenna.**

- (a) Specify address, city, county and state. If no address, specify distance and bearing relative to the nearest town or landmark. 1429 foot knoll on Big Ridge Road, 7.81 kilometers WNW of Healdsburg, California, on a bearing of 284.9° T. (Sonoma County California)
- (b) Geographical coordinates (to nearest second). If mounted on element of an AM array, specify coordinates of center of array. Otherwise, specify tower location. Specify South Latitude or East Longitude where applicable; otherwise, North Latitude or West Longitude will be presumed.

Latitude	38°	37'	47"	Longitude	122°	57'	06"
----------	-----	-----	-----	-----------	------	-----	-----

3. Is the supporting structure the same as that of another station(s) or proposed in another pending application(s)? ☐ Yes ☒ No

If Yes, give call letter(s) or file number(s) or both. \_\_\_\_\_

If proposal involves a change in height of an existing structure, specify existing height above ground level including antenna, all other appurtenances, and lighting, if any. \_\_\_\_\_

## SECTION V-B - FM BROADCAST ENGINEERING DATA (Page 2)

4. Does the application propose to correct previous site coordinates?

☐ Yes ☒ No

If Yes, list old coordinates.

Latitude	°	'	"	Longitude	°	'	"
----------	---	---	---	-----------	---	---	---

5. Has the FAA been notified of the proposed construction?

☒ Yes ☐ No

If Yes, give date and office where notice was filed and attach as an Exhibit a copy of FAA determination, if available.

Exhibit No.  
E-15Date FEBRUARY 4, 1991 Office where filed WESTERN PACIFIC REGION, LOS ANGELES, CA.

6. List all landing areas within 8 km of antenna site. Specify distance and bearing from structure to nearest point of the nearest runway.

Landing Area	Distance (km)	Bearing (degrees True)
(a) <u>HEALDSBURG MUNI</u>	<u>5.35 km.</u>	<u>60.1° T.</u>
(b) _____	_____	_____

7. (a) Elevation: (to the nearest meter)

(1) of site above mean sea level: 436 meters(2) of the top of supporting structure above ground (including antenna, all other appurtenances, and lighting, if any); and 24 meters(3) of the top of supporting structure above mean sea level [(a)(1) + (a)(2)] 460 meters

(b) Height of radiation center: (to the nearest meter) H - Horizontal; V - Vertical

(1) above ground 21 meters (H)21 meters (V)(2) above mean sea level [(a)(1) + (b)(1)] 457 meters (H)457 meters (V)(3) above average terrain 264 meters (H)264 meters (V)

8. Attach as an Exhibit sketch(es) of the supporting structure, labelling all elevations required in Question 7 above, except item 7(b)(3). If mounted on an AM directional-array element, specify heights and orientations of all array towers, as well as location of FM radiator.

Exhibit No.  
E-4

9. Effective Radiated Power:

(a) ERP in the horizontal plane

0.850 kw (H\*) 0.850 kw (V\*)

(b) Is beam tilt proposed?

☐ Yes ☒ No

If Yes, specify maximum ERP in the plane of the tilted beam, and attach as an Exhibit a vertical elevational plot of radiated field.

Exhibit No.

\_\_\_\_\_ kw (H\*) \_\_\_\_\_ kw (V\*)

\*Polarization

SECTION V-B - FM BROADCAST ENGINEERING DATA (Page 3)

10. Is a directional antenna proposed?

☐ Yes ☒ No

If Yes, attach as an Exhibit a statement with all data specified in 47 C.F.R. Section 73.316, including plot(s) and tabulations of the relative field.

Exhibit No.

11. Will the proposed facility satisfy the requirements of 47 C.F.R. Sections 73.315(a) and (b)?

☒ Yes ☐ No

If No, attach as an Exhibit a request for waiver and justification therefor, including amounts and percentages of population and area that will not receive 316 mV/m service.

Exhibit No.

12. Will the main studio be within the protected 316 mV/m field strength contour of this proposal?

☒ Yes ☐ No

If No, attach as an Exhibit justification pursuant to 47 C.F.R. Section 73.1125.

Exhibit No.

13. (a) Does the proposed facility satisfy the requirements of 47 C.F.R. Section 73.207?

☒ Yes ☐ No

(b) If the answer to (a) is No, does 47 C.F.R. Section 73.218 apply?

☐ Yes ☐ No

(c) If the answer to (b) is Yes, attach as an Exhibit a justification, including a summary of previous waivers.

Exhibit No.

(d) If the answer to (a) is No and the answer to (b) is No, attach as an Exhibit a statement describing the short spacing(s) and how it or they arose.

Exhibit No.

(e) If authorization pursuant to 47 C.F.R. Section 73.215 is requested, attach as an Exhibit a complete engineering study to establish the lack of prohibited overlap of contours involving affected stations. The engineering study must include the following:

Exhibit No.

- (1) Protected and interfering contours, in all directions (360°), for the proposed operation.
- (2) Protected and interfering contours, over pertinent arcs, of all short-spaced assignments, applications and allotments, including a plot showing each transmitter location, with identifying call letters or file numbers, and indication of whether facility is operating or proposed. For vacant allotments, use the reference coordinates as the transmitter location.
- (3) When necessary to show more detail, an additional allocation study utilizing a map with a larger scale to clearly show prohibited overlap will not occur.
- (4) A scale of kilometers and properly labeled longitude and latitude lines, shown across the entire exhibit(s). Sufficient lines should be shown so that the location of the sites may be verified.
- (5) The official title(s) of the map(s) used in the exhibit(s).

14. Are there: (a) within 60 meters of the proposed antenna, any proposed or authorized FM or TV transmitters, or any nonbroadcast (except citizens band or amateur) radio stations; or (b) within the blanketing contour, any established commercial or government receiving stations, cable head-end facilities, or populated areas; or (c) within ten (10) kilometers of the proposed antenna, any proposed or authorized FM or TV transmitters which may produce receiver-induced intermodulation interference?

☒ Yes ☐ No

If Yes, attach as an Exhibit a description of any expected, undesired effects of operations and remedial steps to be pursued if necessary, and a statement accepting full responsibility for the elimination of any objectionable interference (including that caused by receiver-induced or other types of modulation) to facilities in existence or authorized or to radio receivers in use prior to grant of this application. (See 47 C.F.R. Sections 73.315(b), 73.316(a) and 73.318.)

Exhibit No.  
E-2/E-2A

SECTION V-3 - FM BROADCAST ENGINEERING DATA (Page 4)

15. Attach as an Exhibit a 7.5 minute series U.S. Geological Survey topographic quadrangle map that shows clearly, legibly, and accurately, the location of the proposed transmitting antenna. This map must comply with the requirements set forth in Instruction V. The map must further clearly and legibly display the original printed contour lines and data as well as latitude and longitude markings, and must bear a scale of distance in kilometers.

Exhibit No.  
E-1C

16. Attach as an Exhibit *(name the source)* a map which shows clearly, legibly, and accurately, and with the original printed latitude and longitude markings and a scale of distance in kilometers. MAP SOURCE: USGS Topographic, Santa Rosa, California  
1:250,000

Exhibit No.  
E-1A

(a) the proposed transmitter location, and the radials along which profile graphs have been prepared;

(b) the 316 mV/m and 1 mV/m predicted contours; and

(c) the legal boundaries of the principal community to be served.

17. Specify area in square kilometers (1 sq. mi. = 259 sq. km.) and population (latest census) within the predicted 1 mV/m contour. (1986 US CENSUS UPDATE)

Area 2,481.1 sq. km.

Population 200,146 persons

18. For an application involving an auxiliary facility only, attach as an Exhibit a map *(Sectional Aeronautical Chart or equivalent)* that shows clearly, legibly, and accurately, and with latitude and longitude markings and a scale of distance in kilometers. DNA

Exhibit No.

(a) the proposed auxiliary 1 mV/m contour; and

(b) the 1 mV/m contour of the licensed main facility for which the applied-for facility will be auxiliary. Also specify the file number of the license.

19. Terrain and coverage data *(to be calculated in accordance with 47 C.F.R. Section 73.313)*

Source of terrain data: *(check only one box below)*

☒ Linearly interpolated 30-second database

☐ 7.5 minute topographic map

(Source: NGDC 30 SECOND TERRAIN DATABASE)

☐ Other *(briefly summarize)*

## SECTION V-B - FM BROADCAST ENGINEERING DATA (Page 5)

Radial bearing (degrees True)	Height of radiation center above average elevation of radial from 3 to 16 km (meters)	Predicted Distances	
		To the 316 mV/m contour (kilometers)	To the 1 mV/m contour (kilometers)
*104.9°T	340.6	18.4	32.1
0	336.1	18.3	31.9
45	273.5	16.4	28.7
90	379.9	19.4	33.9
135	375.5	19.3	33.8
180	233.2	15.1	26.7
225	215.3	14.5	25.6
270	85.1	9.2	16.2
315	211.9	14.4	25.4

\*Radial through principal community, if not one of the major radials. This radial should NOT be included in the calculation of HAAT.

## 20. Environmental Statement (See 47 C.F.R. Section 1.1301 et seq.)

Would a Commission grant of this application come within Section 1.1307 of the FCC Rules, such that it may have a significant environmental impact? ☐ Yes ☒ No

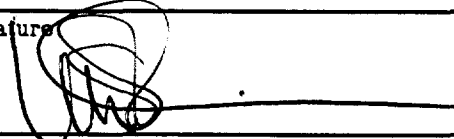
If you answer Yes, submit as an Exhibit an Environmental Assessment required by Section 1.1311.

Exhibit No.

If No, explain briefly why not. Applicant proposes to mount it's FM antenna on a wooden pole with an overall height of 24 meters AGL. Compliance with the ANSI/EPA, and FCC O.S.T. Bulletin #65, RFR Guidelines is certified.  
(see EXHIBIT E-10RHS)

**CERTIFICATION** (see Introduction and Engineering Statement)

I certify that I have prepared this Section of this application on behalf of the applicant, and that after such preparation, I have examined the foregoing and found it to be accurate and true to the best of my knowledge and belief.

Name (Typed or Printed)	Relationship to Applicant (e.g., Consulting Engineer)
ELLIOTT KURT KLEIN	CONSULTING BROADCAST ENGINEER
Signature	Address (Include ZIP Code)
	KLEIN BROADCAST ENGINEERING 5529 EAST SAPPHIRE LANE PARADISE VALLEY, AZ. 85253
Date	Telephone No. (Include Area Code)
FEBRUARY 4, 1991	(602) 991-0575

# ***KLEIN BROADCAST ENGINEERING***

*dedicated to improving the science and technology of radio & television communications*

FEBRUARY 1991

EXHIBIT E-1AD  
FCC FORM 301 APPLICATION  
FOR FM CONSTRUCTION PERMIT  
DEAS COMMUNICATIONS, INC.  
NEW - F M /  
CHANNEL 240 A / 95.9 MHz.  
HEALDSBURG , CALIFORNIA

## TABULATIONS of POPULATIONS and AREAS

<u>CONTOUR</u>	<u>POPULATION</u> <u>1980</u> <u>CENSUS</u>	<u>AREA</u> <u>in</u> <u>SQ.KM.</u>
70 dBu (3.16mv/m)	26,973 persons	805.3 SQ. KM.
60 dBu (1.00mv/m)	174,579 " "	2,481.1 " "

	<u>POPULATION</u> <u>1986</u> <u>US</u> <u>CENSUS</u> <u>UPDATE</u>
60 dBu (1.00mv/m)	200,146 persons

# **KLEIN BROADCAST ENGINEERING**

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FEBRUARY 1991

EXHIBIT E-2  
FCC FORM 301 APPLICATION  
FOR FM CONSTRUCTION PERMIT  
DEAS COMMUNICATIONS, INC.  
FM CHANNEL 240 A / 95.9 mHz.  
HEALDSBURG , CALIFORNIA

## ADVERSE AFFECT RESPONSIBILITY STATEMENT

The proposed site is located in a rural area. The site is 7.81 kilometers WNW of Healdsburg, California. The proposed new 2 bay FM antenna is to be mounted on a wooden pole structure and is 24 meters overall height above ground level, with the antenna center of radiation at 21 meters above ground level. There are no other stations within 60 meters of the proposed site. There is only one other FM station within 10 kilometers of the proposed site. FM Station KMGG, is located 9.96 kilometers from the proposed site. A computer printout of all stations within 10.0 kilometers of the proposed site is listed as Exhibit E-2A of this application. The antenna support structure to be used is a wooden pole 24 meters overall height above ground level. The applicant expects no adverse affect to any existing or proposed facility or allocation within 10 kilometers of the proposed site for the proposed facilities.

The applicant, Deas Communications , Inc., accepts the responsibility for any adverse affect to any other FCC licensed services caused by the operation of the proposed facilities. No adverse affect to any station is expected. No intermodulation interference of any kind is expected, however should the proposed new facilities cause such interference, the applicant will cooperate to the fullest extent to eliminate the problem. The applicant accepts the responsibility for any adverse affect the proposed operation of the facilities proposed in the application causes and will work with the affected party to eliminate the adverse affect at the applicant's expense.

Exhibit E-2A included with this application shows all stations and airport landing areas within 10.0 kilometers of the proposed site.



DEAS COMMUNICATIONS, INC.

EXHIBIT E-2A

Klein Broadcast Engineering  
Paradise Valley, Arizona

Page 1  
February 2, 1991

Site survey program within 10.0 km

Title: DEAS COMMUNICATIONS

Coordinates: 38-37-47 122-57-06

Type	Call sign	Chan	Auth	Height (m )	Power (kW)	City	State	Bear. (deg)	Dist. (km)
AM	KSRO	1350	LIC		5	SANTA ROSA	CA	139.9	27.62
FM	ALLOD	240				HEALDSBURG	CA	90.0	1.50
FM	KMGG	249	LIC	342	.25	MONTE RIO	CA	184.7	9.96
TV	K25AQ	25	CP	825	2.61	LAKEPORT, ETC.	CA	43.2	27.27
TW	8203 W. DRY CREEK RD			34		HEALDSBURG	CA	347.3	6.67
TW	401 CENTER ST			20		HEALDSBURG	CA	104.9	7.46
TW	124 BAILHACHE ROAD			49		HEALDSBURG	CA	108.9	9.07
TW	21047 GEYSERVILLE AV			7		GEYSERVILLE	CA	25.9	9.47
TW	2 MI OF RT. US 101			24		HEALDSBURG	CA	97.2	9.56
AP	HEALDSBURG MUNI			91		HEALDSBURG	CA	60.1	5.35

10 records printed.

# ***KLEIN BROADCAST ENGINEERING***

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FEBRUARY 1991

EXHIBIT E-4  
FCC FORM 301 APPLICATION  
FOR FM CONSTRUCTION PERMIT  
DEAS COMMUNICATIONS, INC.  
NEW - FM  
CHANNEL 240 A / 95.9 MHz.  
HEALDSBURG, CALIFORNIA

## VERTICAL PLAN SKETCH

( NOT TO SCALE )

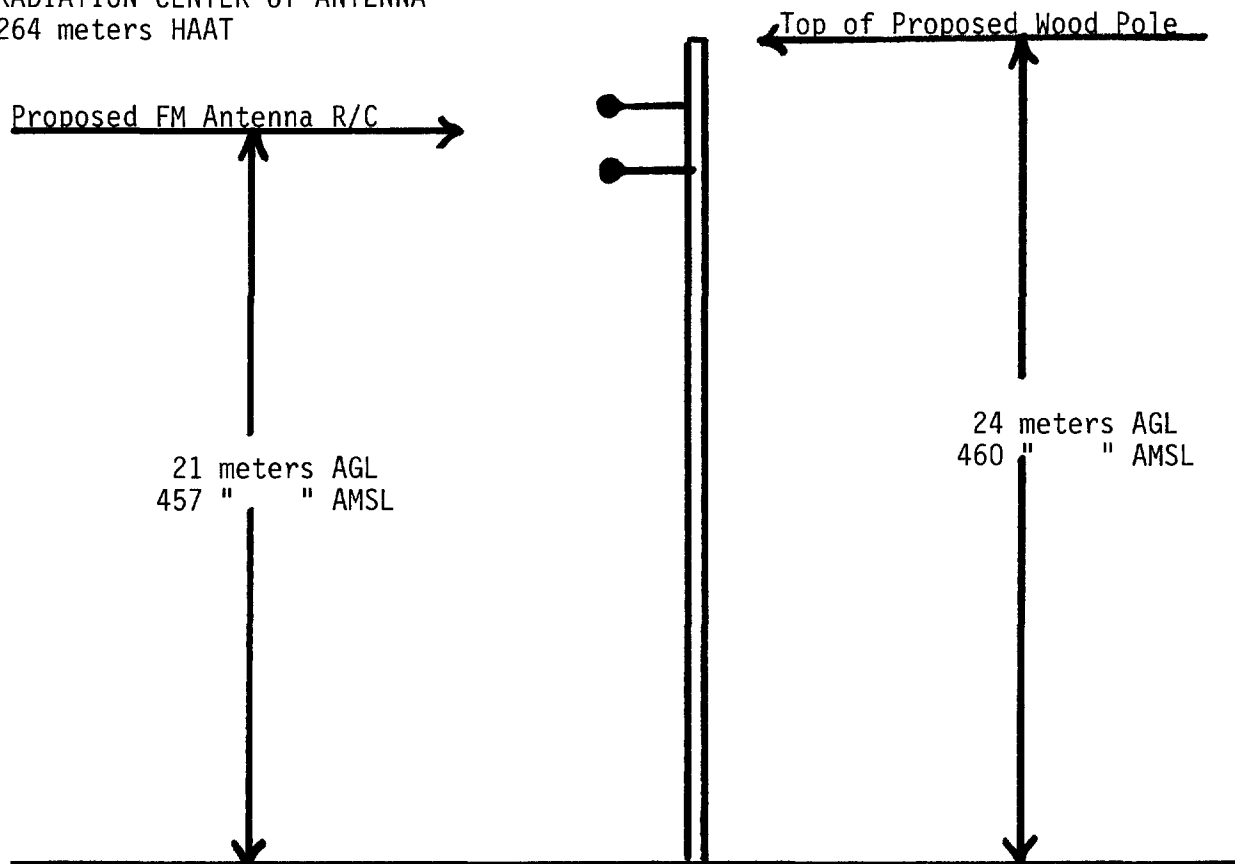
### SITE LOCATION COORDINATES:

NL: 38° - 37' - 47"

WL: 122° - 57' - 06"

### RADIATION CENTER of ANTENNA

264 meters HAAT



SITE GROUND LEVEL 436 meters AMSL

COMPUTERIZED ENGINEERING REPORTS/ALLOCATION STUDIES  
AM · FM · AM DIRECTIONALS · AUDIO · STL · SATELLITE COMMUNICATIONS  
5529 East Sapphire Lane · Scottsdale, Arizona 85253 · 602 991-0575

FM Spacing study

Title: DEAS / HEALDSBURG / 1429  
Channel 240A ( 95.9 MHz)  
Database: FCC 12/24/90

Latitude: 38-37-47  
Longitude: 122-57-06  
Safety zone: 30 km

Call	Auth	Licensee name	Chan	ERP-kW	Latitude	Br-to	Dist.	Req.
City of License	St	FCC File no.	Freq	EAH-m	Longitude	-from	(km)	(km)
ALLOD			237B1		38-27-30	102.3	87.44	48
Vacaville	CA	DOC-88-491	95.3		121-58-22	282.9	39.44	CLEAR
Effective 1-12-90-Site Restricted-Rsvd for KUIC, FM, per D88-491								
PRM	ADD	Joe L. & L. Ann Gross	238A		38-45-12	64.7	32.35	31
Middletown	CA		95.5		122-36-54	244.9	1.347	CLOSE
Counterproposal								
ALLOD			239B		37-41-23	156.5	113.7	113
San Francisco	CA		95.7		122-26-12	336.9	.683	CLOSE
Coordinates updated from LIC record BLH850128LM								
KKHI-FM LIC	Buckley Broadcasting Cor		239B	6.90	37-41-23	156.5	113.7	113
San Francisco	CA BLH-850128LM		95.7	393	122-26-12	336.9	.683	CLOSE
ALLOD			240A		38-37-47	90.0	1.501	115
Healdsburg	CA	DOC-90-228	95.9		122-56-04	270.0	-113	SHORT
Site Restricted-Effective 7-1-90; Filing window 01/11-02/10/91								
KYMX	LIC	WGN of California, Inc.	241B	50	38-38-09	89.2	121.8	113
Sacramento	CA	BLH-850313KK	96.1	145	121-33-11	270.1	8.786	CLOSE
ALLOD			241B		38-38-09	89.2	121.8	113
Sacramento	CA		96.1		121-33-11	270.1	8.786	CLOSE
Coordinates updated from LIC record BLH850313KK								
ALLOD			242C		40-43-36	339.8	248.7	95
Eureka	CA		96.3		123-58-18	159.1	153.7	CLEAR
Coordinates updated from LIC record BLH5918								
KOIT-FM LIC	Bay Area Broadcasting Co		243B	33	37-45-20	155.6	106.5	69
San Francisco	CA	BLH-6256	96.5	430	122-27-05	335.9	37.47	CLEAR
GRANDFATHERED AT 33KW @ 430M HAAT.								
ALLOD			293A		39-50-06	25.7	148.9	10
Orland	CA	DOC-84-231	106.5		122-11-44	206.2	138.9	CLEAR
# 74 - SITE RESTRICTED; Filing window 06/03-07/14/88 **CLOSED**								
KJUG-FM LIC	Westcoast Broadcasting,		294B	1.20	36-17-08	124.4	447.4	15
Tulare	CA	BLH-860930KD	106.7	778	118-50-17	306.9	432.4	CLEAR

>> End of channel 240A study <<

DEAS COMMUNICATIONS, INC.  
EXHIBIT E-6

Klein Broadcast Engineering  
Paradise Valley, Arizona

Page 1  
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Terrain Averages from NGDC 30-second Topographic database

Job Title: DEAS COMMUNICATIONS

Latitude: 38-37-47

Center of Radiation 457.0 m ( 1499.3 ft) A.M.S.L.

Longitude: 122-57-06

Bearing (Degrees true)	3.0 to 16.0 kilometer average terrain elevation		Height above average terrain	
	(meters)	(feet)	(meters)	(feet)
.0	120.9	396.7	336.1	1102.7
45.0	183.5	602.0	273.5	897.3
90.0	77.1	253.0	379.9	1246.4
* 104.9	116.4	381.9	340.6	1117.5
135.0	81.5	267.4	375.5	1232.0
180.0	223.8	734.3	233.2	765.1
225.0	241.7	793.0	215.3	706.4
270.0	371.9	1220.1	85.1	279.2
315.0	245.1	804.1	211.9	695.2
Average:	193.2	633.9	263.8	865.5

\* = Radial not included in average

DEAS COMMUNICATIONS, INC.  
EXHIBIT E-7

Klein Broadcast Engineering  
Paradise Valley, Arizona

Page 1  
February 2, 1991

Service contours based on FCC F(50,50) curves

Title: DEAS COMMUNICATIONS Latitude: 38-37-47  
Channel: 240 C/R 457.0 meters ( 1499.3 feet) A.M.S.L. Longitude: 122-57-06

Bearing (degrees)	HAAT (meters) (feet)	ERP (kilowatts) (dBk)	70 dBu (3.16 mV/m) contour	60 dBu ( 1 mV/m) contour	54 dBu (.50 mV/m) contour
.0	336.1 1102.7	.850 -.71	18.3 km 11.4 mi	31.9 km 19.8 mi	42.8 km 26.6 mi
45.0	273.5 897.3	.850 -.71	16.4 km 10.2 mi	28.7 km 17.9 mi	39.2 km 24.4 mi
90.0	379.9 1246.4	.850 -.71	19.4 km 12.0 mi	33.9 km 21.1 mi	45.1 km 28.0 mi
* 104.9	340.6 1117.5	.850 -.71	18.4 km 11.4 mi	32.1 km 20.0 mi	43.0 km 26.7 mi
135.0	375.5 1232.0	.850 -.71	19.3 km 12.0 mi	33.8 km 21.0 mi	44.9 km 27.9 mi
180.0	233.2 765.1	.850 -.71	15.1 km 9.4 mi	26.7 km 16.6 mi	36.7 km 22.8 mi
225.0	215.3 706.4	.850 -.71	14.5 km 9.0 mi	25.6 km 15.9 mi	35.4 km 22.0 mi
270.0	85.1 279.2	.850 -.71	9.2 km 5.7 mi	16.2 km 10.1 mi	23.0 km 14.3 mi
315.0	211.9 695.2	.850 -.71	14.4 km 8.9 mi	25.4 km 15.8 mi	35.1 km 21.8 mi
<hr/>					
HAAT:	263.8 865.5				

Note: Radial(s) denoted by "\*" not included in HAAT calculation.

# **KLEIN BROADCAST ENGINEERING**

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FEBRUARY 1991

EXHIBIT E-10-RHS  
FCC FORM 301 APPLICATION  
FOR FM CONSTRUCTION PERMIT  
DEAS COMMUNICATIONS, INC.  
NEW - F M  
FM CHANNEL 240 A / 95.9 mHz.  
HEALDSBURG , CALIFORNIA

## R F RADIATION HAZARD COMPLIANCE STATEMENT

The facilities proposed by the applicant in this FCC Form 301 application for FM construction permit comply with the FCC O.S.T. Bulletin Number 65 and the ANSI C-95.1-1982 RF exposure guidelines. The interpolation of the figures in Table One page 37 of the above referenced document show WORST case requirements of 8.9 meters above the ground level requirement for the radiation center of the proposed new two (2) bay FM antenna. A combined vertical and horizontal effective radiated power of 1.70 kilowatts was used. The radiation center for the new FM antenna is 21.0 meters above the ground level at the site, well within the above requirement for the station as proposed. The proposed antenna to be used is a Harris/Electronics Research FML-2-C , two section circularly polarized antenna. The antenna manufacturer, Electronics Research Inc. states it's antenna meets the best case downward radiation pattern as listed on page 37 of the FCC OST Bulletin #65 RF Guidelines.

Occupational compliance is certified by the reduction of operating power or the complete cessation of operation during the time maintenance personnel are on the tower.

In addition to the above the applicant has by computer program performed the required calculations to predict power density at the base of the antenna support structure. This program predicts a maximum power density of 0.0228 mw/cm<sup>2</sup> at a distance of 13 meters from the base of the antenna support structure. All other power density was calculated to be below this maximum predicted level for a distance of 0 meters at the base of the antenna support structure out to a distance of 1000 meters.

# **KLEIN BROADCAST ENGINEERING**

*dedicated to improving the science and technology of radio & television communications*

EXHIBIT E-10RHS cont'd page two: NEW-FM

The computer program uses the Far Field method for calculation of power density. The formula used by the computer program was derived from the FCC O.S.T. Bulletin #65 pages 7 through 12 inclusive. The formula used may be stated in the following manner.

$$E(V/m) = 1.6 \cdot 221.72 \cdot \text{SQRT}(\text{ERP}) \cdot (\text{element pattern factor}) \cdot (\text{array factor}) / \text{DIST}$$

$$H(A/m) = 1.6 \cdot 0.588 \cdot \text{SQRT}(\text{ERP}) \cdot (\text{element pattern factor}) \cdot (\text{array factor}) / \text{DIST}$$

Where:

ERP = effective radiated power in kilowatts relative to a halfwave dipole.

DIST = distance from the antenna radiation center to the observation point in meters.

The 1.6 factor found in the ANSI/EPA formula and used above at the beginning of each equation takes into account possible contributions from ground reflections. The element pattern factor is a linearly interpolated relative field value at the appropriate depression angle below the horizon as taken directly from the EPA data. The array factor is computed at the appropriate depression angle using the number of antenna elements, when normalized to 1.0 in the main lobe. This array factor only applies to arrays of point sources where each source has equal power distribution and phase, and are uniformly spaced. The element patterns themselves can be associated with particular antenna designs. As of May 1986 there were six element types identified for FM antennas as listed in the ANSI/EPA data and FCC O.S.T. Bulletin #65. The crossed ring type of element used on the Harris / ERI FML-2-C antenna is listed and was used for the calculations in this application.

This assures compliance with the FCC and ANSI/EPA requirements. Based on the above mentioned table and guidelines the operation of the new FM transmission facilities is in compliance with FCC O.S.T. Bulletin Number 65 and the ANSI C-95.1-1982 RF exposure guidelines. The applicant certifies compliance with the ANSI and FCC Human Exposure RF Radiation Guidelines.

# **KLEIN BROADCAST ENGINEERING**

*dedicated to improving the science and technology of radio & television communications*

STATE of ARIZONA     )  
CITY of SCOTTSDALE    ) ss:  
COUNTY of MARICOPA   )

Elliott Kurt Klein, being duly sworn states, that he is a consulting broadcast engineer with offices located at 5529 East Sapphire Lane, Paradise Valley, Arizona 85253. That he has been employed in the broadcast engineering profession since 1967, and that he has prepared many different reports and applications and presented them before the Federal Communications Commission, over the past twenty-three years. That his engineering qualifications are a matter of record with the Federal Communications Commission. That he has held a valid First Class Radiotelephone Operators License since 1967. That present license number is PG -11-21248, valid for life. That he is a member in good standing of The Society of Broadcast Engineers since 1969 (SBE). That he is a member in good standing of the Institute of Electrical and Electronic Engineers (IEEE). That the calculations and or measurements and exhibits in the accompanying report or application were made by him personally or under his supervision and direction, and that all facts contained herein are true of his own personal knowledge and belief, and on such facts or statements made on belief, they are believed to be true. He assumes no liability for any errors or omissions and shall not be liable for injuries and/or damages (including consequential) which might result from use of said information. All pages, engineering exhibits, and statements are covered under the copyright laws of the United States of America and remain the property of the client and Klein Broadcast Engineering. Any unauthorized use or reproduction is prohibited by law.



Affiant: Elliott Kurt Klein for the firm:

KLEIN BROADCAST ENGINEERING

Subscribed and sworn to before me,

this 4<sup>th</sup> day of February 1991



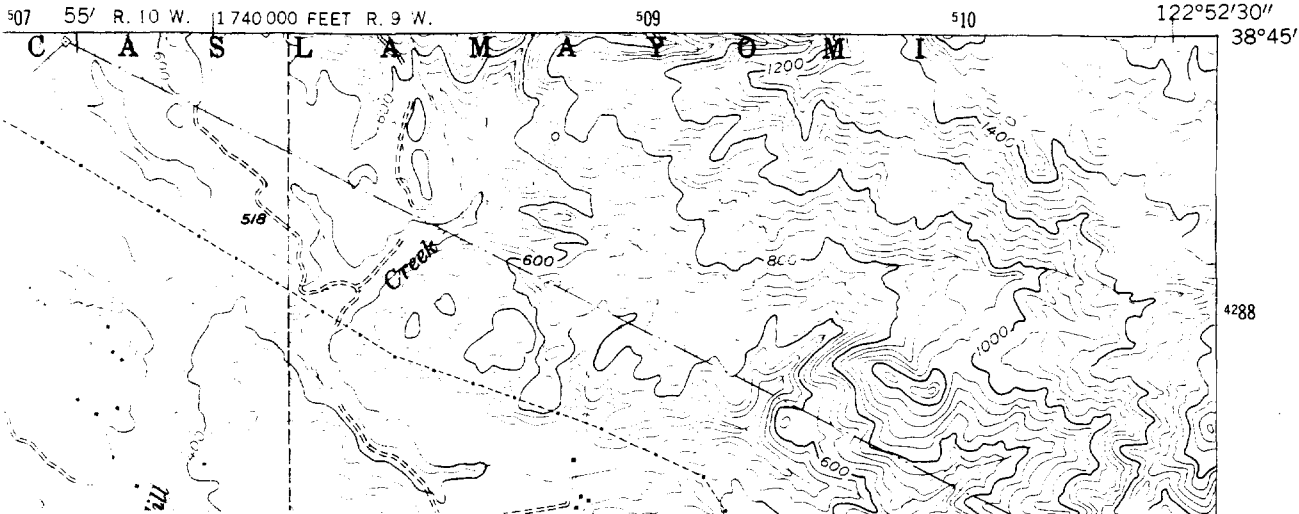
Notary Public:

Aug. 26, 1994  
Date of Commission Expiration:

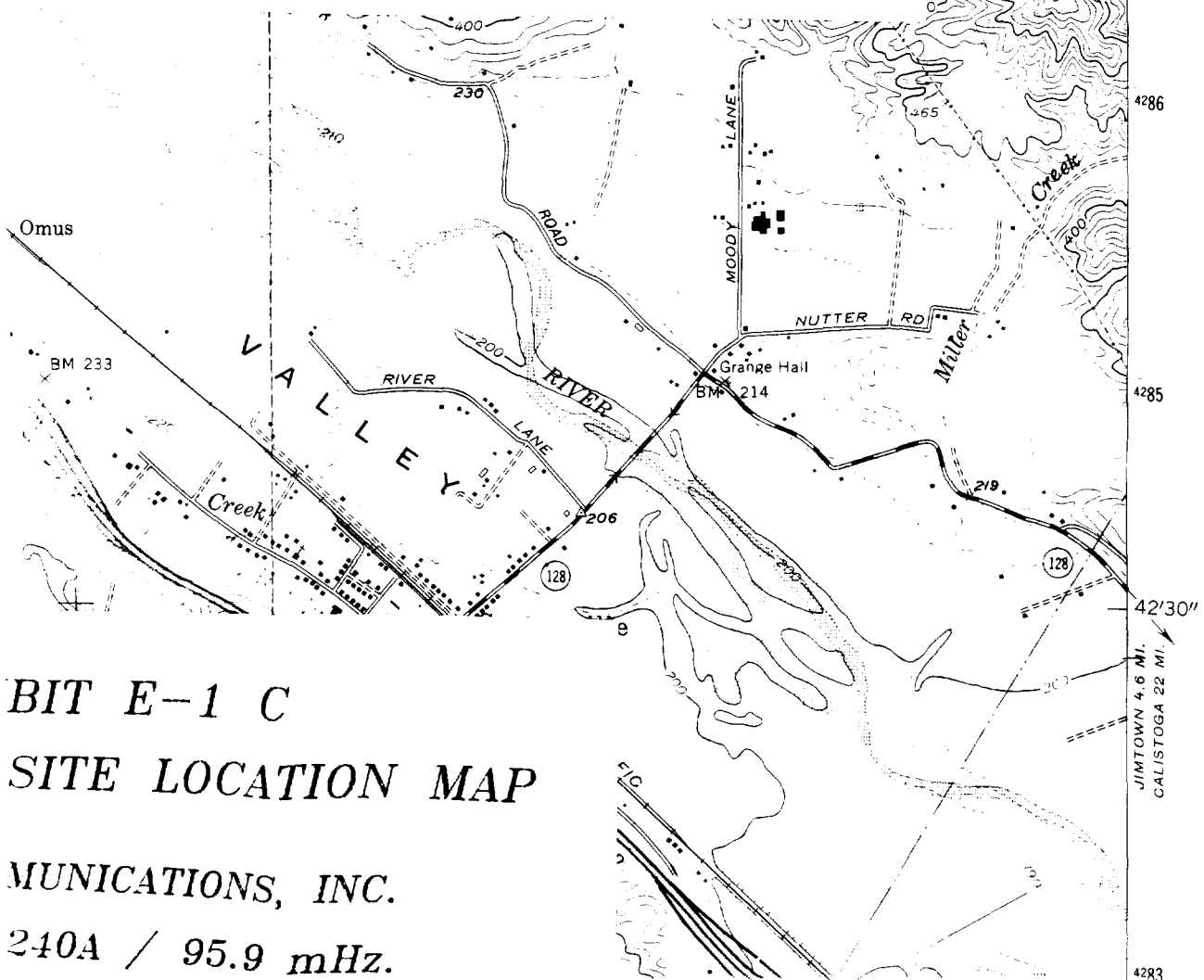


GEYSERVILLE QUADRANGLE  
CALIFORNIA—SONOMA CO.  
7.5 MINUTE SERIES (TOPOGRAPHIC)  
NW/4 HEALDSBURG 15' QUADRANGLE

1461 IV SE  
(THE GEYSERS)

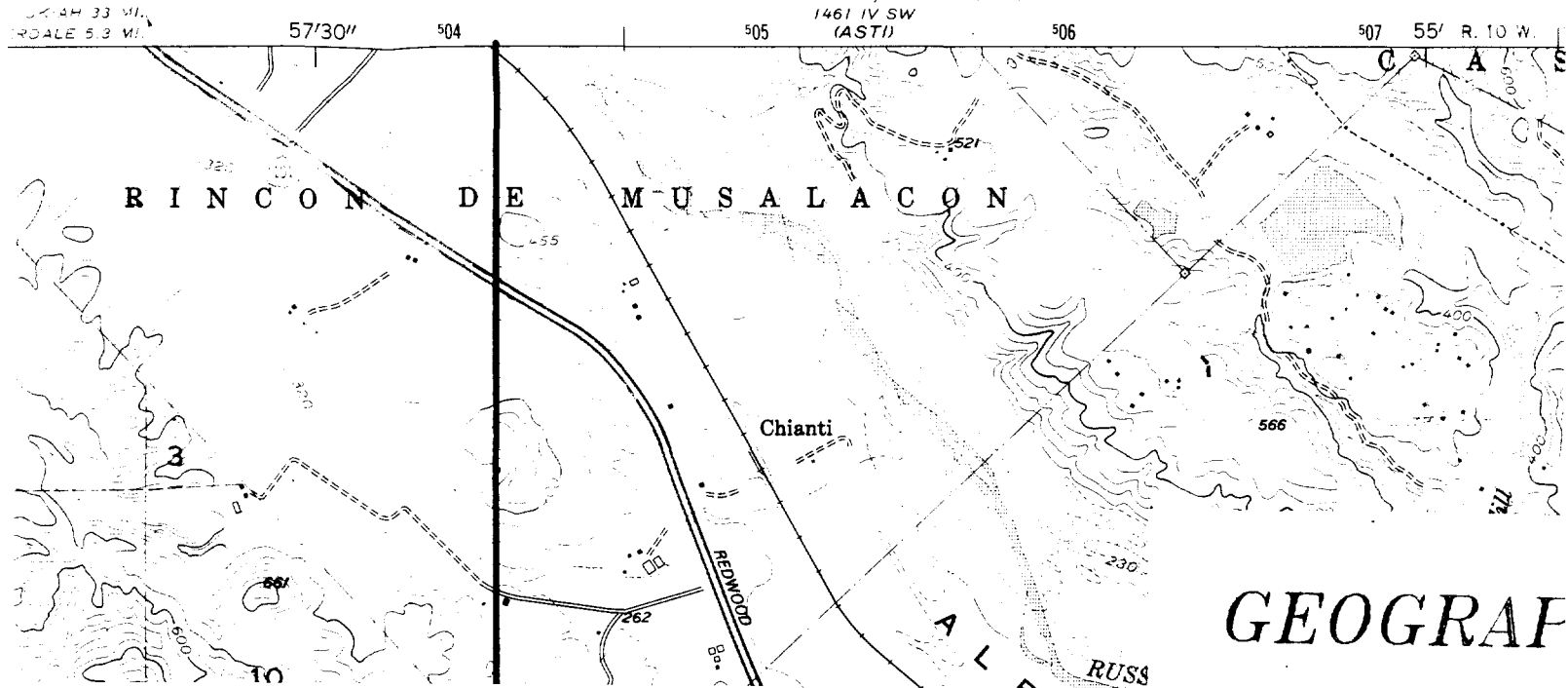


TOPOGRAPHIC COORDINATE  
LOCATION / SITE MAP



BIT E-1 C  
SITE LOCATION MAP  
MUNICIPALITIES, INC.  
240A / 95.9 mHz.

STATE OF CALIFORNIA  
 GOODWIN J. KNIGHT, GOVERNOR  
 FRANK B. DURKEE, DIRECTOR OF PUBLIC WORKS  
 HARVEY O. BANKS, STATE ENGINEER



GEOGRAPHIC  
 LOCATION

proving the science and technology of radio & television communications

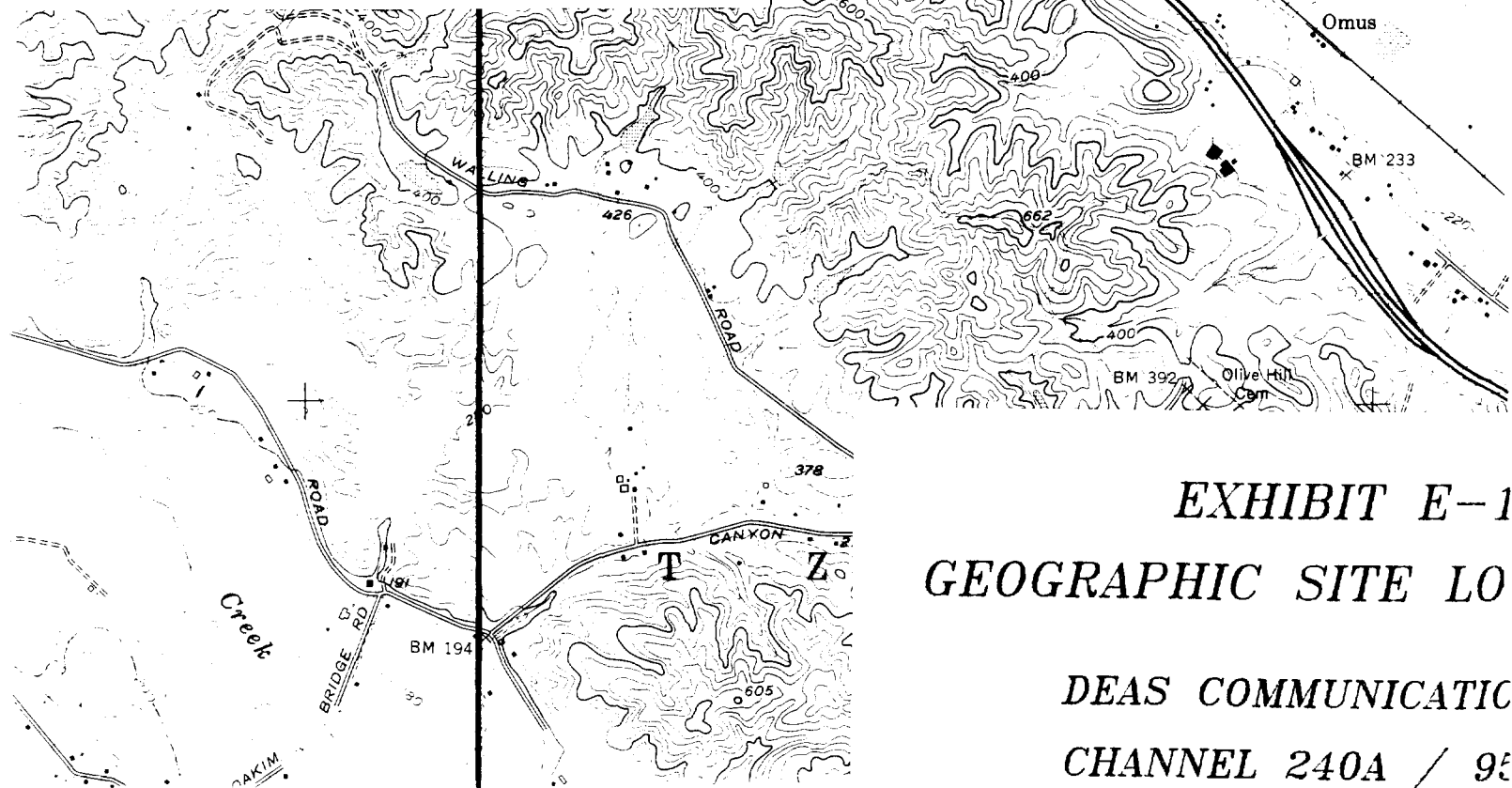
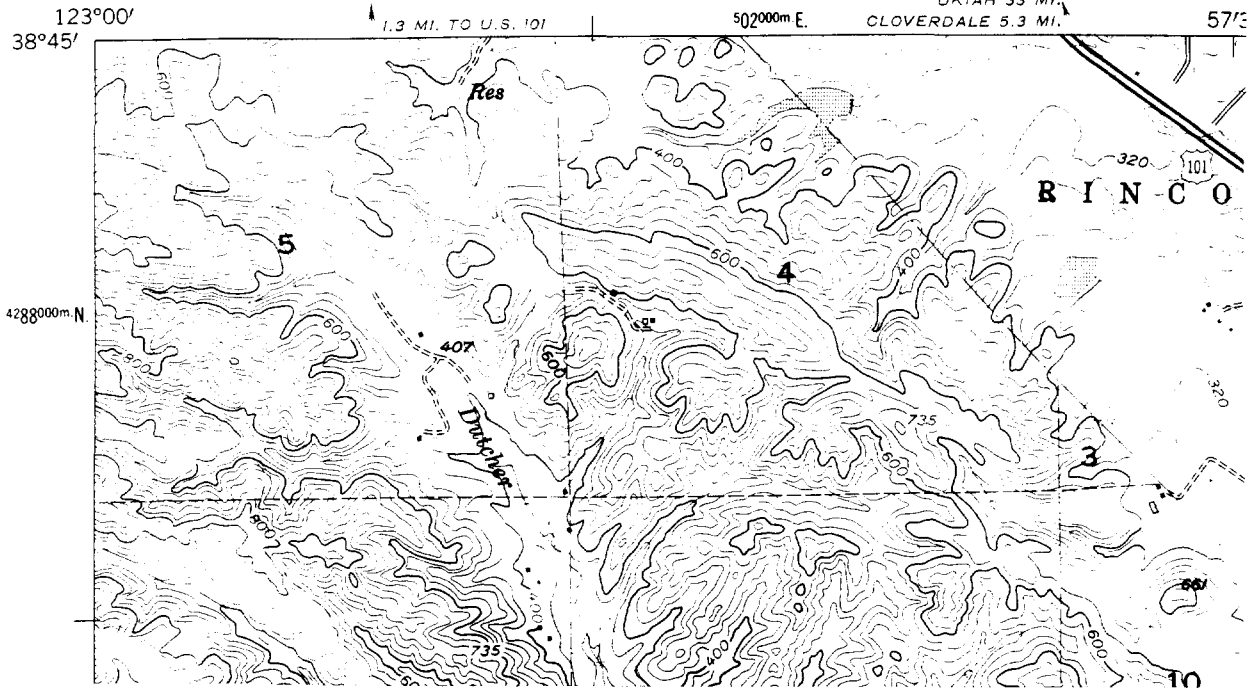


EXHIBIT E-1  
 GEOGRAPHIC SITE LOCATION  
 DEAS COMMUNICATIONS  
 CHANNEL 240A / 95

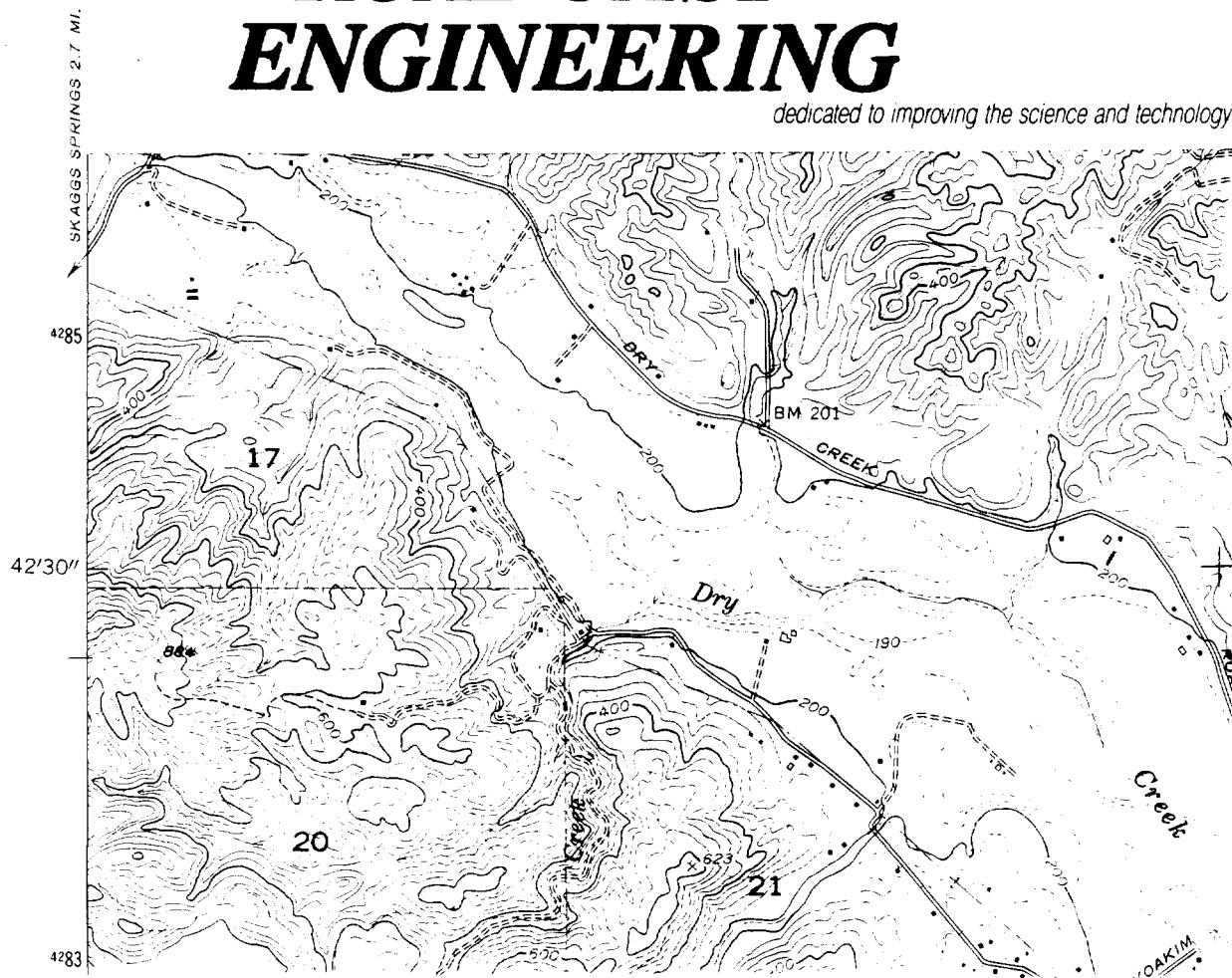
1361 SE  
(CLOVERDALE)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY



# ***KLEIN BROADCAST ENGINEERING***

*dedicated to improving the science and technology*

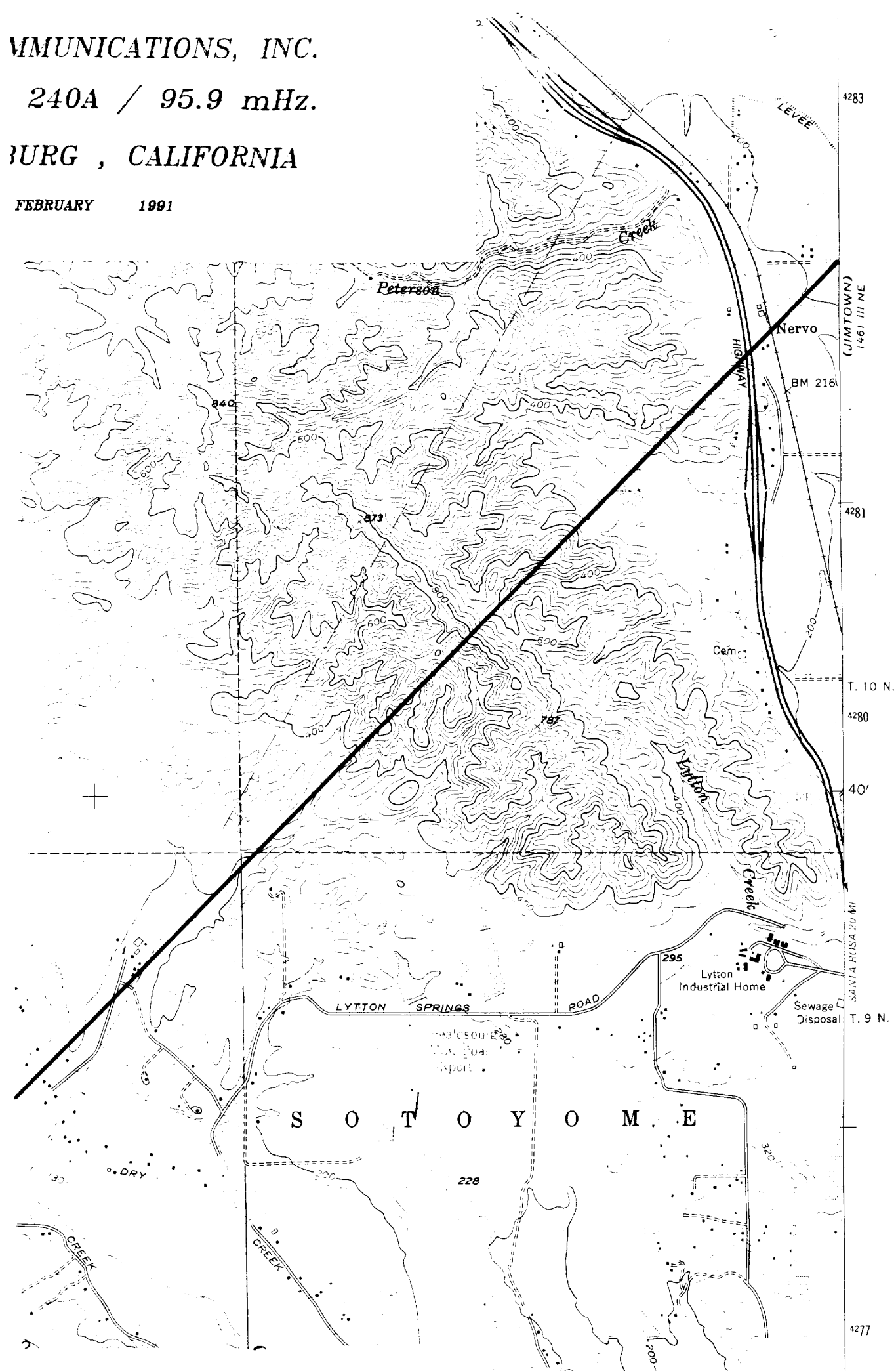


COMMUNICATIONS, INC.

240A / 95.9 mHz.

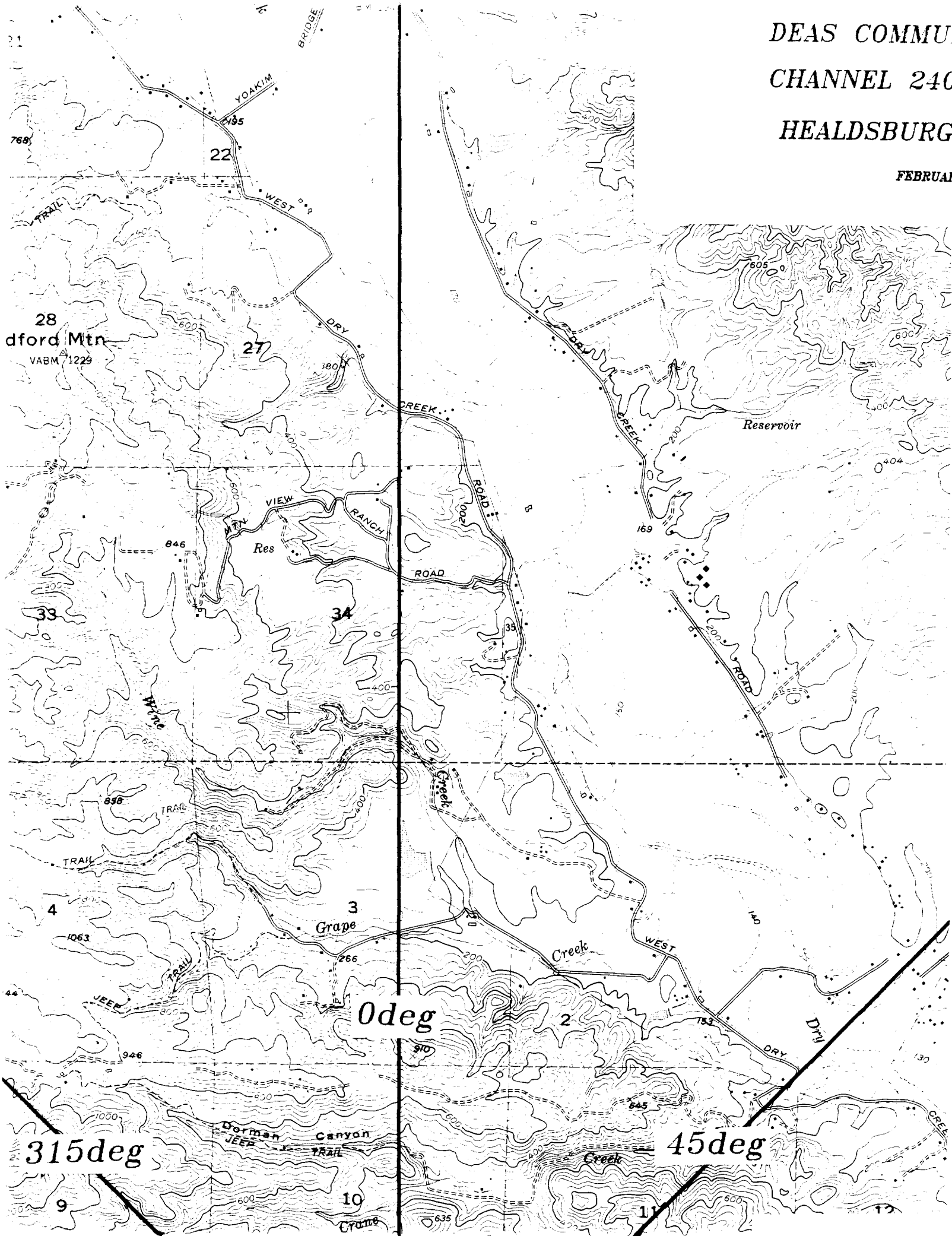
BURG, CALIFORNIA

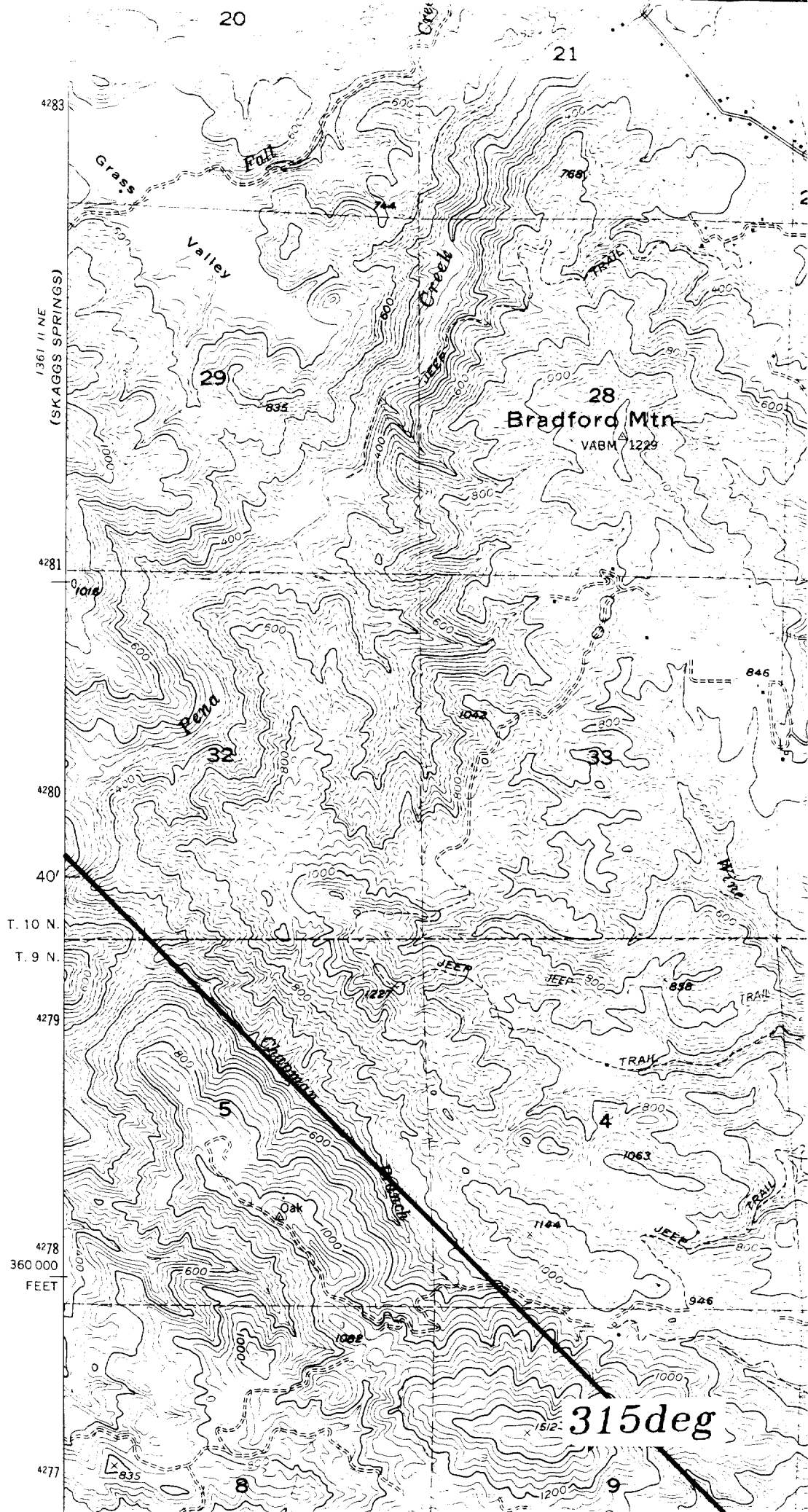
FEBRUARY 1991



DEAS COMMU.  
CHANNEL 240  
HEALDSBURG

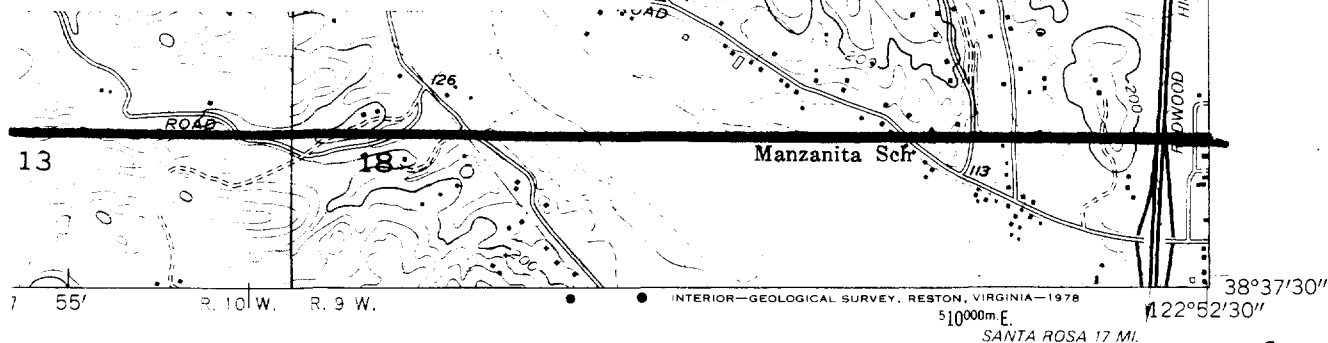
FEBRUAR





S O T O Y O M E

PROPOSED SITE  
-47/122-57-06



MILE

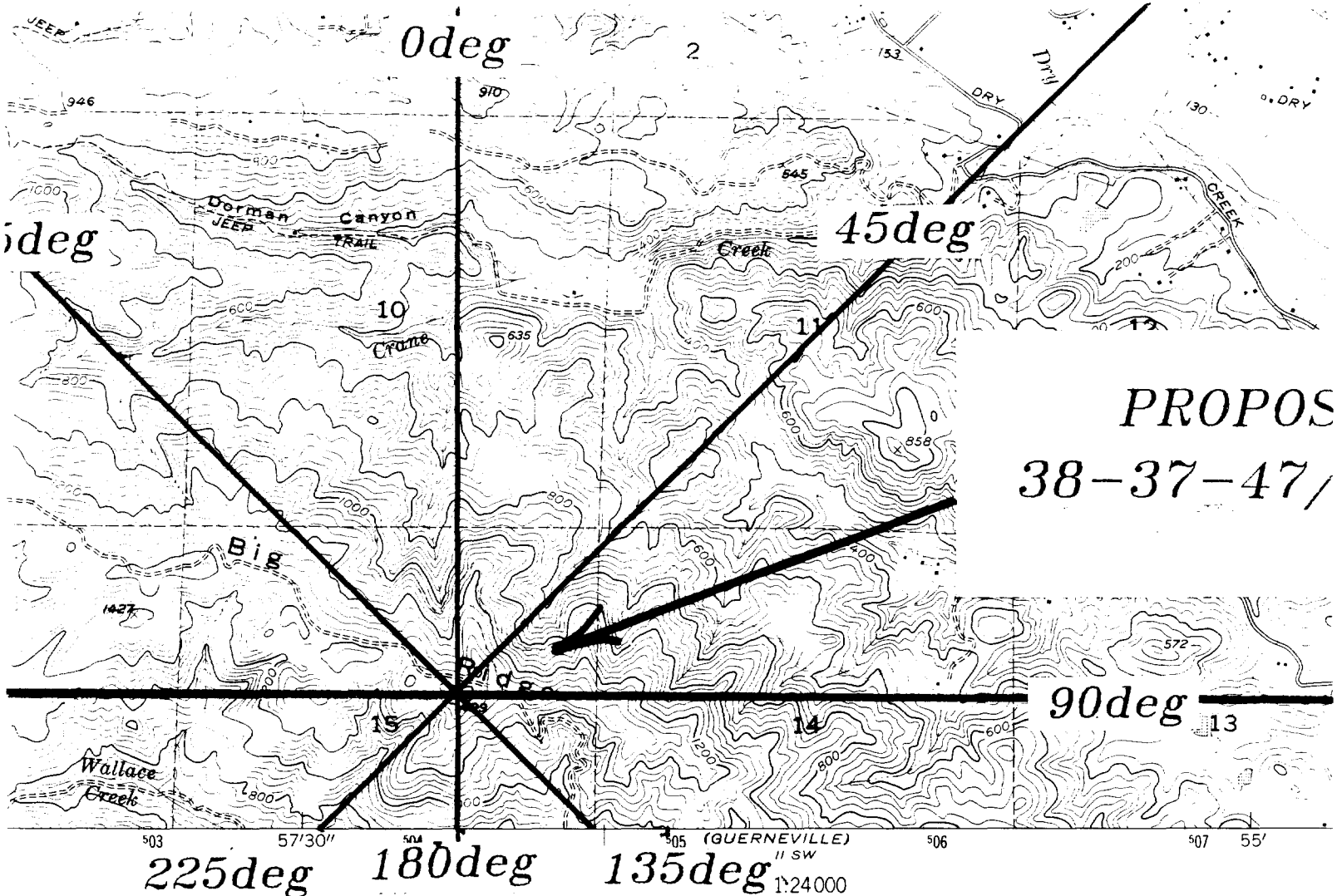
ROAD CLASSIFICATION

Heavy-duty ..... Light-duty .....  
Medium-duty ..... Unimproved dirt .....  
U. S. Route      State Route

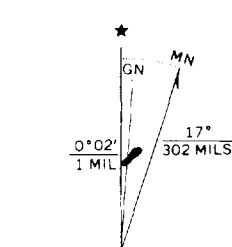


GEYSERVILLE, CALIF.  
NW/4 HEALDSBURG 15' QUADRANGLE  
N3837.5-W12252.5/7.5

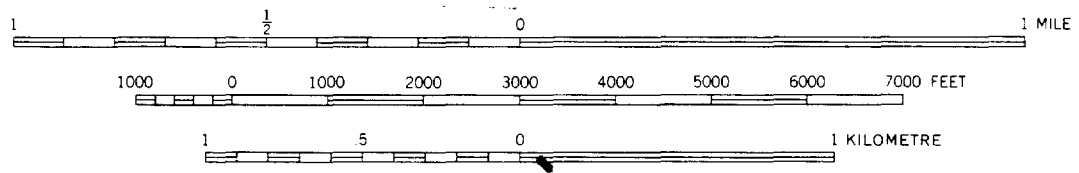
1955  
PHOTOREVISED 1975  
AMS 1461 III NW-SERIES V895



PROPOS  
38-37-47/



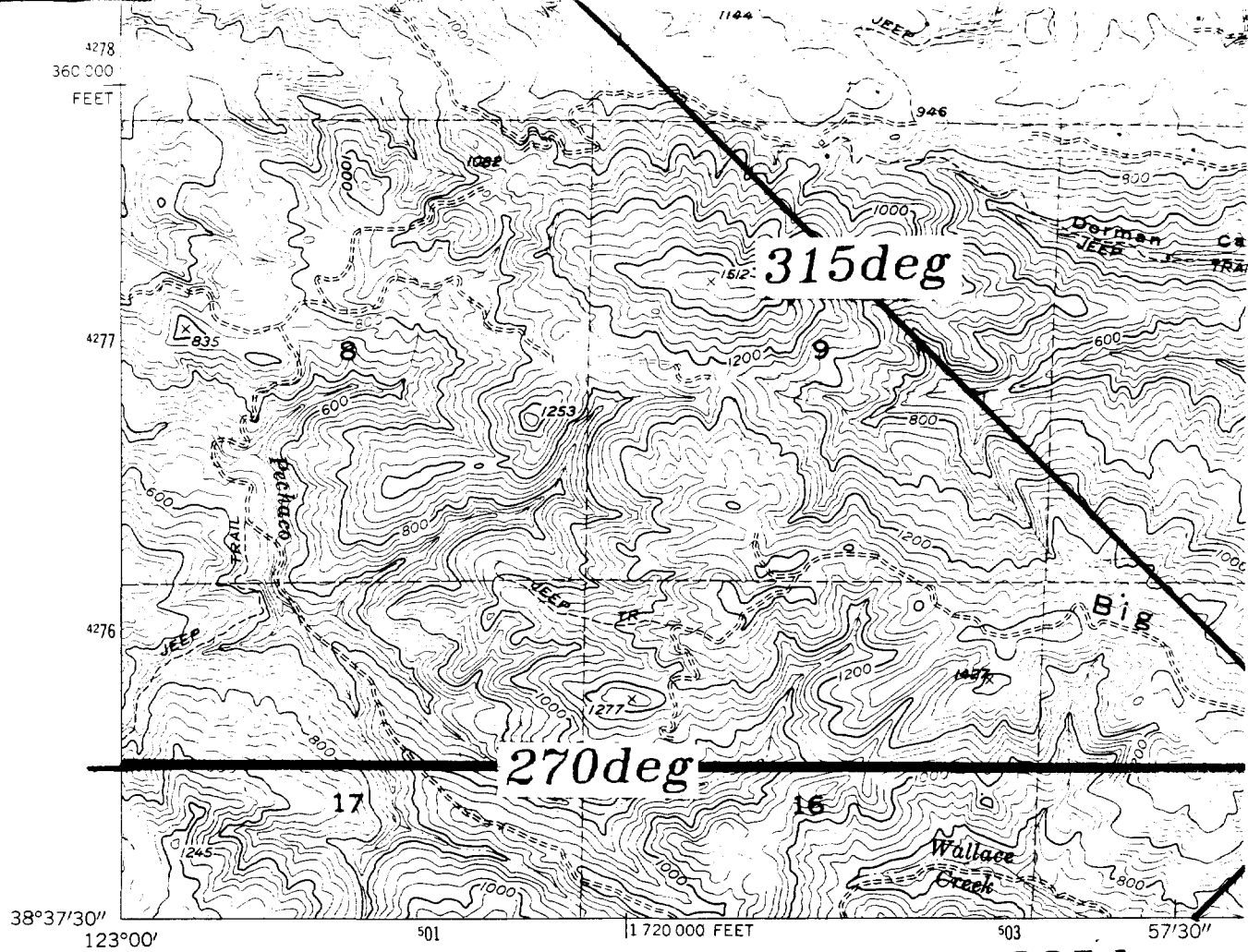
1975 MAGNETIC NORTH  
LINEATION AT CENTER OF SHEET



CONTOUR INTERVAL 40 FEET  
DASHED LINES REPRESENT 10-FOOT CONTOURS  
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS  
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092  
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST





(CAZADERO)  
1361 11 SE

Mapped, edited, and published by the Geological Survey  
Control by USGS and USC&GS  
Topography from aerial photographs by multiplex methods  
and by planetable surveys 1955. Aerial photographs taken 1953  
Polyconic projection. 1927 North American datum  
10,000-foot grid based on California coordinate system, zone 2  
Dashed land lines indicate approximate locations  
Unchecked elevations are shown in brown  
1000-metre Universal Transverse Mercator grid ticks,  
zone 10, shown in blue  
Revisions shown in purple compiled from aerial photographs  
taken 1975. This information not field checked

225deg

